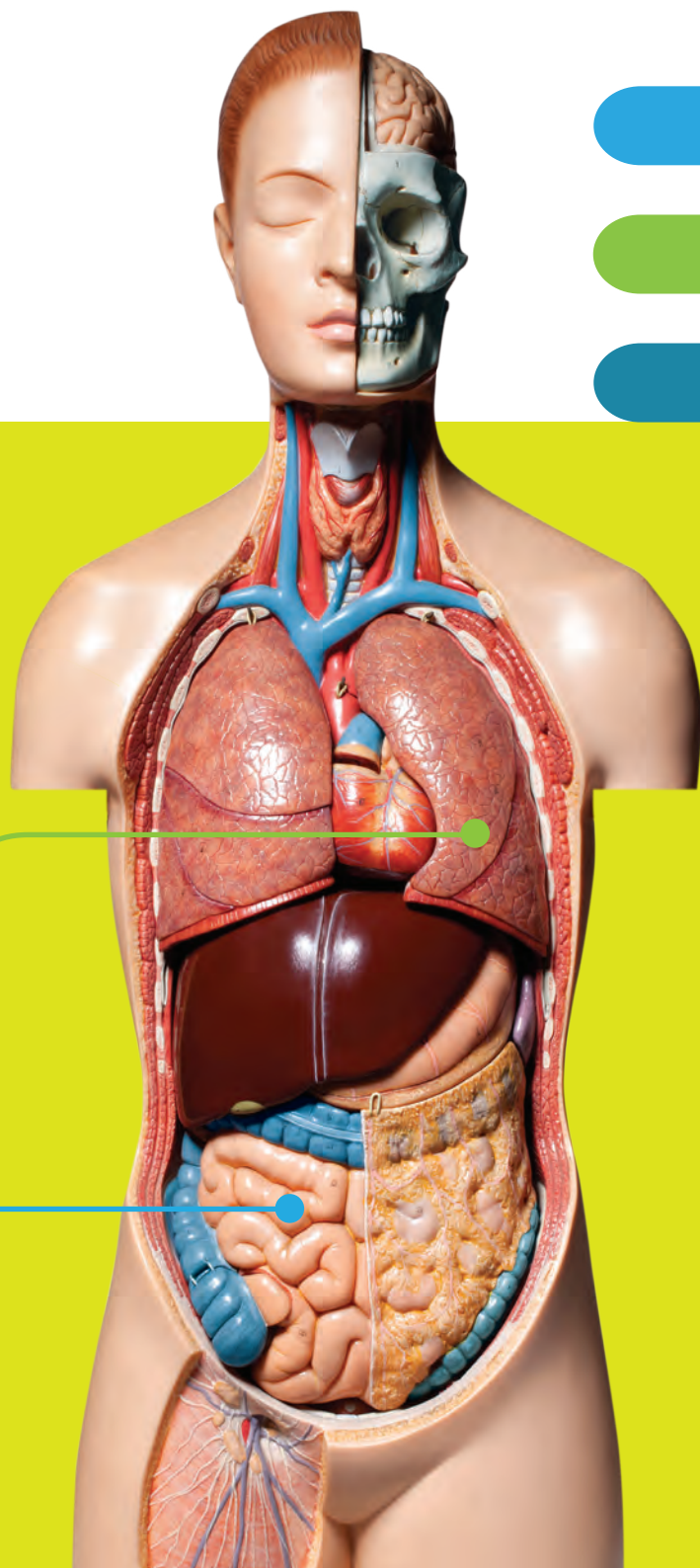


**MIMETAS**

the organ-on-a-chip company

# HIGH-THROUGHPUT HUMAN TISSUE AND DISEASE MODELS

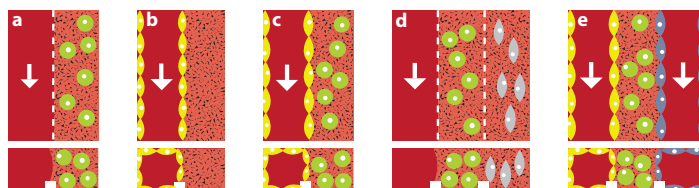
**Organ on a chip. Now.**



# High-throughput human tissue and disease models

We all want better medicines, that's obvious. To make this possible, you need better disease models. They should be fully human and physiologically relevant. Truly informative tools, compatible with compounds and with your high-throughput readout equipment. And of course you need them today, rather than tomorrow.

A dream? Not anymore. As true pioneers in organ-on-a-chip biology, MIMETAS is proud to offer high-throughput human tissue and disease models in OrganoPlates®.



Examples of model configurations in two- and three-lane OrganoPlates®. Additional lanes are optional.

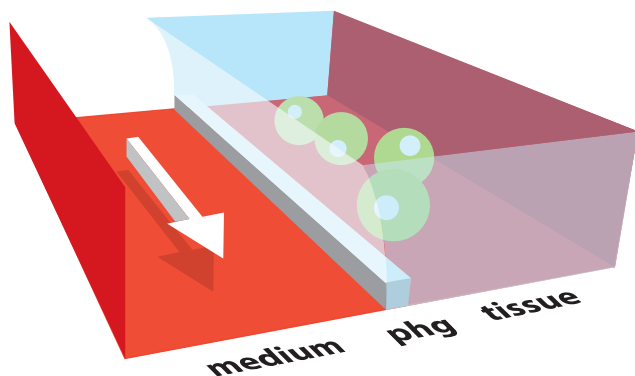
## Two-lane models

- a. Tissue in ECM gel
- b. Tubule boundary tissue
- c. Tubule with tissue in gel

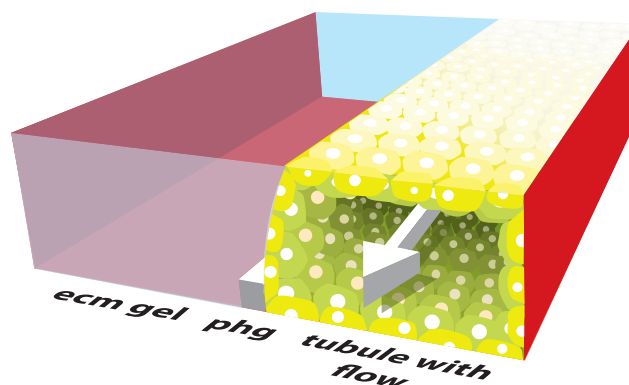
## Three-lane models

- d. Adjacent tissues in ECM
- e. Tissue in ECM flanked by epithelial tubules

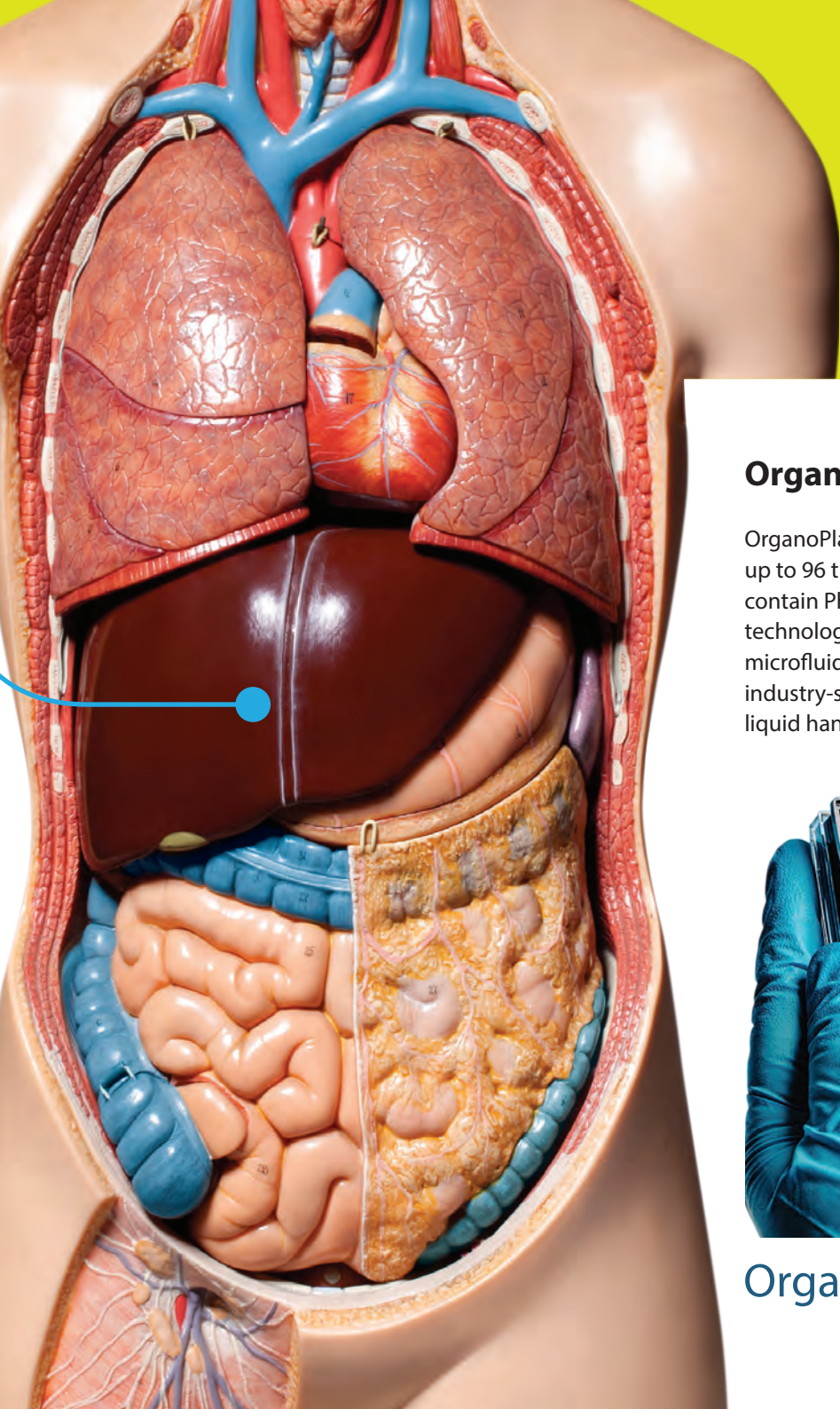
Top panels: microscope view  
Bottom panels: cross section through culture chamber  
Dotted lines: Phaseguides™



An OrganoPlate® two-lane culture chamber with a perfused medium channel, Phaseguide™ (phg) and tissue channel with cells in ECM (extracellular matrix) gel



A two-lane culture chamber with a perfused epithelial tubule in the medium channel, Phaseguide™ (phg) and gel channel with ECM gel



## OrganoPlates®

OrganoPlates® are microfluidic 3D culture plates, supporting up to 96 tissue models on a single plate. OrganoPlates® contain Phaseguides™, a proprietary, passive liquid handling technology for membrane-free definition of tissues in microfluidic chambers. OrganoPlates® are based on the industry-standard 384-well plate for full compatibility with liquid handling- and readout equipment.

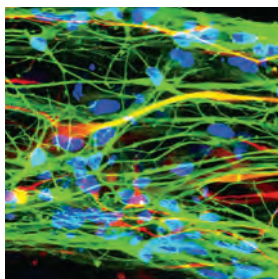


Organ-on-a-chip. Now.

## Applications without limitations

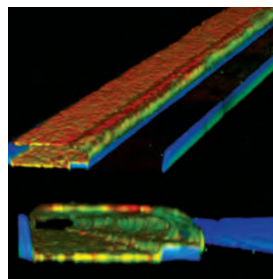
Our versatile OrganoPlate® platform supports a wide range of applications. They include colon, blood vessel, kidney, lung, and neuronal models. All models have unique physiological properties. Low- to high-throughput, fully compatible with readout equipment, low compound absorption, pump-free perfused and of course biologically relevant.

### Human iPSC neurons



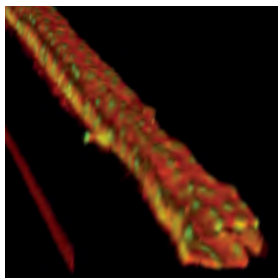
Human neurons in OrganoPlates® are electrically active, form networks and express mature neuronal markers. We culture human iPSC neurons and glia for over two months and assay for activity, viability and many other parameters.

### Nephrotoxicity models



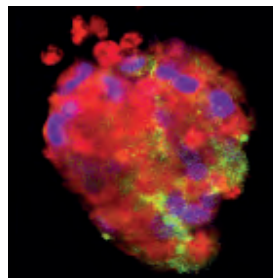
Polarized human proximal tubule models in OrganoPlates® support barrier integrity- and drug transport assays. They allow for detailed studies of nephrotoxic compounds, with basal and apical access to the epithelium.

### Perfused blood vessels

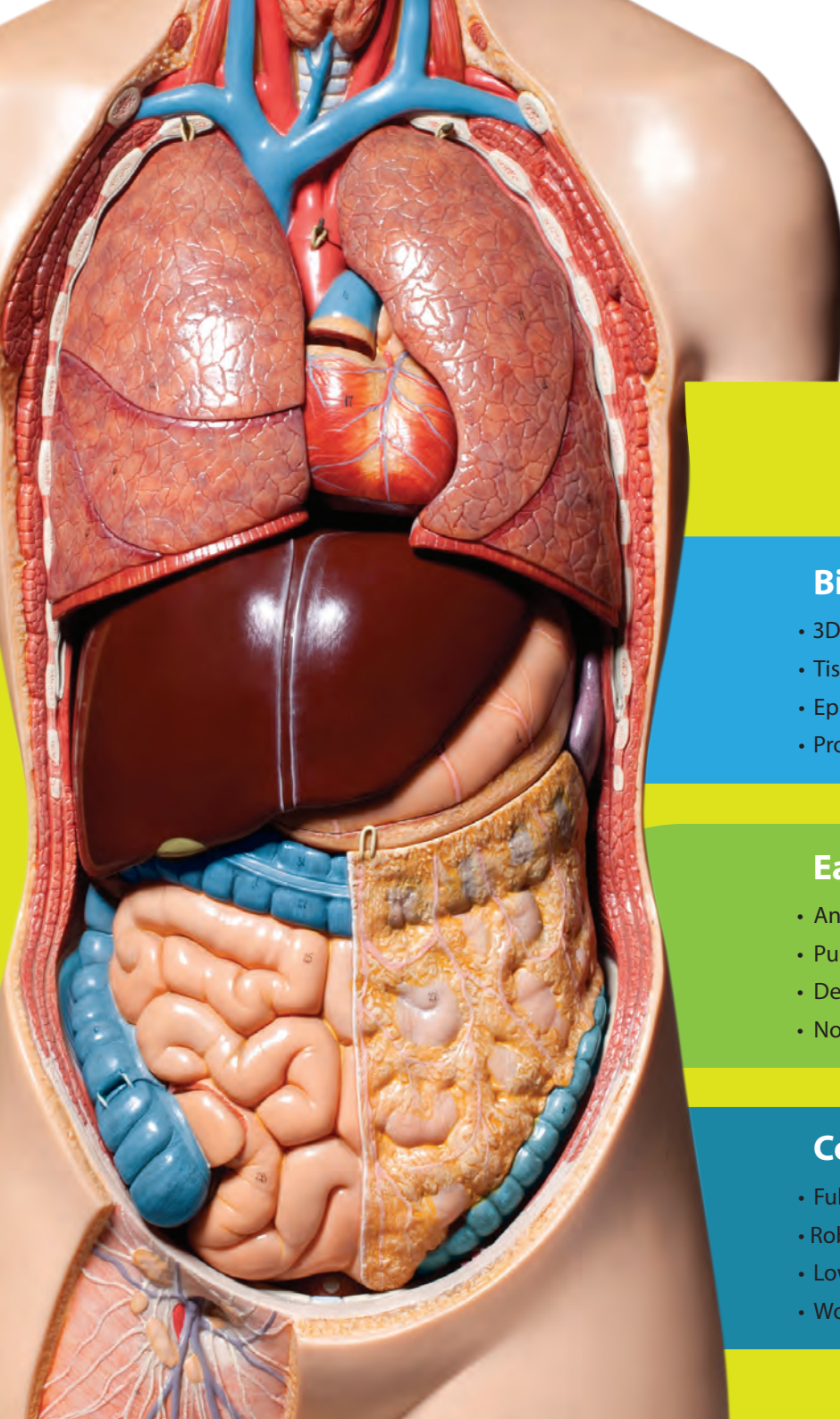


HUVECs, BOECs and human iPSC-derived endothelial cells form fully functional, perfused microcapillaries. Readouts include barrier integrity assays, monocyte attachment, transmigration and real-time angiogenesis assays.

### Long-term liver models



We use primary hepatocytes and liver model cell lines to create perfused 3D liver tissue models. For example, HepG2 spheroids, cultured for over a month in OrganoPlates® exhibit physiological functions, such as metabolic competence.



## Biologically relevant

- 3D disease- and tissue models
- Tissue co-culture without physical barriers
- Epithelial and endothelial tubules
- Prolonged culture and exposure up to months

## Easy to use

- Anyone can work with OrganoPlates®
- Pump- and tube-free perfusion flow
- Defined culture height for easy focusing
- No special equipment required

## Compatible

- Fully compatible SBS microplate format
- Robotic and manual pipetting
- Low compound absorption
- Works with standard high-content and plate readers



**MIMETAS BV**  
**[www.mimetas.com](http://www.mimetas.com)**  
**JH Oortweg 19- 2333 CH Leiden**  
**The Netherlands**  
**[info@mimetas.com](mailto:info@mimetas.com)**  
**+31 (0)85 888 31 61**

All rights reserved. Copyright 2017 MIMETAS BV. MIMETAS®, OrganoPlate®, PhaseGuide™ and 'the-organ-on-a-chip-company'™ are trademarks owned by MIMETAS BV.  
model nr 17-001